COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY & ENVIRONMENTAL AFFAIRS
DEPARTMENT OF ENVIRONMENTAL PROTECTION
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MEMORANDUM

TO: Directors of Massachusetts-Certified Environmental Laboratories

FROM: Ann Marie Allen, Director, MassDEP Laboratory Certification Office/WES

RE: Revised Massachusetts Regulations for the Certification and Operation of Environmental Analysis Laboratories at 310 CMR 42.00

DATE: March 3, 2008

On October 5, 2007, the Massachusetts Department of Environmental Protection Laboratory Certification Office (LCO), Sen. W. X. Wall Experiment Station (WES), promulgated revised regulations at 310 CMR 42.00 for the Certification and Operation of Environmental Analysis Laboratories, and at 310 CMR 4.00 for fees and timelines that are associated with the revised laboratory certification regulations.

A copy of the revised Laboratory Certification regulations and the Department's responses to comments received during the public comment periods may be found on the MassDEP website at: http://www.mass.gov/dep/water/laws/regulati.htm#labcert

Official copies of the regulations may be purchased from the State House Bookstores at:

State House Bookstore
Room 116
Boston, MA 02133
617-727-2834

State House West Bookstore
436 Dwight St.
Springfield, MA 01103
413-784-1376

Southeastern Office of the Secretary of the Commonwealth
218 South Main St., Suite 206
Fall River, MA 02721
508-646-1374

Or, go to http://www.sec.state.ma.us/spr/sprcat/catidx.htm for information on how to order online or by mail.

This memorandum is provided to highlight some of the updates to 310 CMR 42.00. It is the laboratory's responsibility to have knowledge of and comply with all Federal and Massachusetts regulations, standards, and policies for all categories in which it has been certified.

In addition to the regulation changes noted in a memorandum from this office dated October 26, 2007, the revised regulations add requirements to:

1. Calibrate certified reference thermometers and weights at least once every five years.

2. Check top-loader balances for accuracy monthly in their range of use.

3. Record the slope of the pH meter monthly.

4. Annually calibrate in-line meters used to check reagent-grade water.

5. Maintain a written policy listing the laboratory's criteria for rejection of samples.

6. Include a list of Standard Operating Procedures in the laboratory's Quality Assurance Plan.

7. Perform sample preparation and analyses for method detection limit studies over a time period of three days.

8. Check the performance of fume hoods and biological safety cabinets annually.

9. Allow up to 48 hours for turbidity and/or growth to develop when performing sterility checks of sample containers and buffered water used in the microbiology laboratory.

10. Obtain actual test results of the Inhibitory Residue Test performed on each lot of detergent or washing product used in the microbiology laboratory when submitting the manufacturer's certification of the test.

11. Prior to use, test each batch of medium prepared in the laboratory and each batch of pre-prepared, ready-to-use medium with positive and negative culture controls.

12. Analyze 10% of microbiology analyses requiring enumeration in duplicate and monitor the range of logs.

13. Compare plate counts for experienced analysts and analysts-in-training when using microbiological methods requiring enumeration.

14. Identify, in writing, those samples needing special reports (e.g., MCL exceedance) when the laboratory subcontracts with another laboratory.

15. Take measures to ensure that original observations, data, and calculations are not lost or changed. Electronic records must be maintained in a secure manner so as not to permit unauthorized changes or loss of original entries.

Limit on Provisional Certification

The revised regulations limit the amount of time a laboratory may hold provisional certification. If a laboratory fails to correct the deficiencies that led to provisional certification within 6 months, its certification for the affected analyte(s)/method(s) will be revoked. Laboratories holding provisional certification for any analyte(s)/method(s) as of October 5, 2007 must correct deficiencies by April 5, 2008 or revocation for all affected analyte(s)/method(s) will occur.

Certification for Additional Analytes Available

The revised regulations also expand the scope of certification to include the analysis of:

- Perchlorate in drinking water and wastewater

- Total coliform, *E. coli*, and enterococci in drinking water source water (See "Enterococci in Source Water" below).

- *E. coli* and enterococci in ambient waters, including recreational waters
- Fecal coliform, *E. coli*, and enterococci in wastewater
- Fecal coliform and *Salmonella* spp. in biosolids (See "Microbiological Analysis of Biosolids" below)
- Additional metals, pesticides, and semi-volatile organic compounds.

To apply for certification for the above analytes/methods, the laboratory must:

1. Complete an application for modification of certification. Applications are available on the MassDEP website at http://www.mass.gov/dep/service/online/lcforms.htm
2. Participate in proficiency test studies meeting the requirements of the LCO Policy for Chemistry Proficiency Testing or Microbiology Proficiency Testing, as applicable. These policies have been updated and are available on the MassDEP website at: http://www.mass.gov/dep/water/laws/policies.htm - labcert

   Proficiency test studies completed prior to the date of the laboratory's application for additional certification and that are already on file at the LCO may be used to satisfy PT requirements if the PT studies are determined to be in compliance with LCO PT policies. If the laboratory intends to use historical PT data to meet application requirements, it is requested that the laboratory provide the vendor used, study numbers, and closing dates to the LCO at the time the application for additional certification is submitted.
3. For laboratories located outside of Massachusetts, maintain resident state certification for the analyte(s)/method(s) for which Massachusetts certification is applied.

Perchlorate in Potable Water

To apply for certification to analyze samples for the presence of perchlorate in potable water, laboratories must achieve a minimum reporting limit lower than 0.0010 mg/L. Proficiency tests performed to obtain or maintain certification must be Department-approved whole-volume low-level samples prepared in a mixed common anion solution Analyses must be conducted using one of the following four approved methods for drinking water:

- EPA method 314.0, revision 1.0, November 1999, as modified to achieve the MRL of 0.0010 mg/L (Ion Chromatography)
- EPA Method 314.1 (Ion Chromatography)
- EPA Method 331.0 (Liquid Chromatography Electrospray Ionization Mass Spectrometry (LC/MS or LC/MS/MS)
- EPA Method 332.0 (Ion Chromatography with Suppressed Conductivity and Electrospray Ionization Mass Spectrometry (IC/MS or IC/MS/MS)

Perchlorate in Non-Potable Water

Due to matrix interference effects inherent in ion chromatography methods, certification for the analysis of perchlorate in wastewater matrices will be offered only for EPA Method 331.0. As part of the requirements to be considered for certification for the analysis of perchlorate in non-potable water, the laboratory must achieve accurate results from the analysis of a wastewater (Water Pollution) PT study acceptable to the Department.

Semi-Volatile Organics in Non-Potable Water

Proficiency test studies that include only polynuclear aromatic hydrocarbons may not be used to satisfy proficiency test requirements for the analysis of semi-volatile organic base/neutral compounds.

Organochlorine Pesticides in Non-Potable Water

A laboratory maintaining current certification for organochlorine pesticides in non-potable water may request certification for the additional pesticides offered under the revised scope of certification at 310 CMR 42.05(b)11 by sending a letter to the LCO specifying the additional certification desired.

Microbiological Analytes in Potable Water

The LCO will issue updated certified parameter lists to all laboratories holding MassDEP potable water microbiology certification. The updated lists will distinguish between certification for the microbiological analysis of samples under the Total Coliform Rule from that for the analysis of samples under source water rules.

Effective January 1, 2008, laboratories seeking to obtain or maintain certification for total coliform, fecal coliform, *E. coli*, or heterotrophic plate count in drinking water source water must successfully participate in potable water PT studies consisting of a minimum of one enumerative sample per analyte/method. Studies performed prior to January 1, 2008 for fecal coliform and heterotrophic plate count must contain a minimum of three samples. **Note:** A set of 10 potable water (WS) PT samples, when analyzed as a sample for enumeration, may be used to satisfy the requirements for both enumerative methods and the corresponding presence/absence Water Treatment and Distribution (Total Coliform Rule) methods. For enumerative methodology, the laboratory must correctly analyze all samples in the set.

For water suppliers that will be monitoring *E. coli* in source water under the Long Term 2 Enhanced Surface Water Treatment Rule (LT2 Rule) beginning in April 2008 (Schedule 3), the use of a MassDEP-certified laboratory holding certification for enumeration of *E. coli* is recommended. For water suppliers whose monitoring begins in October 2008 (Schedule 4), the use of a MassDEP-certified laboratory holding certification for enumeration of *E.coli* will be required.

Microbiological Analytes in Non-Potable Water

Laboratories seeking to obtain or maintain certification for enumerative techniques in ambient water and/or wastewater must successfully participate in non-potable water PT studies consisting of a minimum of one enumerative sample per parameter/method. **Note:** Laboratories that are applying for certification for the same analyte, using the same methodology, in both ambient water and wastewater, may use the same studies to fulfill PT requirements in both matrices. Acceptable results will fulfill the PT requirements for both areas of certification. Unacceptable results will apply to the specific analyte/method for both ambient water and wastewater.

Enterococci in Source Water

The LCO will not offer certification for the analysis of enterococci in source water (ground water) at this time pending the Drinking Water Program's development of regulations for compliance with the Ground Water Rule. A suitable PT program will then be developed. Requirements for applying for this certification will be communicated to certified laboratories and posted on the MassDEP website.

Microbiological Analysis of Biosolids

Based upon the current lack of suitable proficiency test studies, the LCO will not offer certification for fecal coliform or *Salmonella* in biosolids at this time. The LCO is currently reviewing the needs of the Department for biosolids certification as well as exploring the development of a suitable PT program. If

the Department decides to offer certification for biosolids, the requirements for applying for this certification will be communicated to certified laboratories and posted on the MassDEP website.